United Nations E/CN.3/2003/10

Economic and Social Council

Distr.: General
13 December 2002

Original: English

Statistical Commission
Thirty-fourth session
4-7 March 2003
Item 4 (b) of the provisional agenda*
Economic statistics: measuring the new economy

Report of the Office for National Statistics of the United Kingdom

Note by the Secretary-General

The Secretary-General has the honour to transmit to the Statistical Commission a report prepared by the Office for National Statistics of the United Kingdom on a conference on the theme "Official statistics and the new economy" which was organized by the International Association for Official Statistics. The report contains a summary of the conclusions reached by the conference, which the Commission may wish to review.

* E/CN.3/2003/1.

02-75103 (E) 090103

Conference on the theme "Official statistics and the new economy" organized by the International Association for Official Statistics

Report of the Office for National Statistics of the United Kingdom

Contents

		Paragraphs	Page
I.	Introduction	1–2	3
II.	Scope	3–4	3
III.	Main questions	5	3
IV.	A new paradigm	6–15	4
V.	Leading issues in social statistics	16–19	5
VI.	The international statistical community and the new economy measurement agenda	20–27	6
VII.	Priorities for official statisticians to tackle now	28–32	7
VIII.	Monitoring progress	33–34	10

I. Introduction

1. The 2002 London conference of the International Association for Official Statistics (IAOS) has no official procedure for adopting or agreeing official conclusions of its work. However, the opportunity afforded by the wide range of papers and discussions at the conference — and the interaction between statisticians, economists, public policy makers and business leaders — is one that many participants found valuable. The conference raised important issues in response to:

- The growing interest in understanding changes brought about by information and communication technology (ICT) in economic activity and structure;
- The wide range of work under way in many organizations to improve that understanding.

2. We would like to build upon the papers and discussions to provide a suggested direction for future international action. The present report summarizes discussions in the closing session of the conference, inputs from delegates and key points from proceedings. The United Kingdom Office for National Statistics offers the report as a record of conclusions reached by official statisticians, economists and statistics users on the important challenges that the ICT revolution poses to their work to inform public policy and the private sector. The report also summarizes participants' views on the actions and priorities needed to bring about necessary change.

II. Scope

3. The conference theme, "Official statistics and the new economy", drew comment. Some felt that "new economy" measurement reflected too narrow an expression of the challenge facing statisticians and economists to reflect cross-cutting changes in the economy and in society brought about by the increasing role of ICT. Others considered it too wide a term, covering organizational and behavioural changes unrelated to ICT.

4. Frameworks presented at the conference described the knowledge-based economy and the information society. The conclusions contained in the present report address the interpretation of the term "new economy", embraced by both those concepts. However, they also cover issues raised which are outside that ICT-related definition, particularly those relating to output measurement in services, which are essentially "old economy" measurement problems exposed by changes in economic structure.

III. Main questions

5. The closing session of the conference tackled the need for change under four main headings:

(a) Do we need a new paradigm, or simply an updating and extension of existing national accounts and other statistics?

(b) What are leading issues in social statistics (education, labour, health, welfare etc.) to address as a result of the new economy?

(c) Are current arrangements underpinning the international statistics community adequate to push ahead with the new economy measurement agenda?

(d) What are the most important priorities for official statisticians to tackle now?

IV. A new paradigm

6. The world economy is becoming significantly more ICT-intensive, with major effects on other technology development fields (such as biotechnology or materials science) and with the impact of speeding up economic development processes. Companies and markets are more knowledge-intensive, leading to rapid change on a global scale. The information technology change has led to:

- Rapid expansion in the products and services available to consumers and businesses;
- Changes in the way consumers and businesses behave and interact.

7. The conference made it clear that there is an urgent need to update statistical measures to reflect the economy's changing structure. That need is especially pressing in the areas of services output and prices, which have traditionally been a "weak spot" in national accounts. Growth in services, to become a dominant element in many economies, has made agreed solutions even more urgent. This is not a new economy problem, but an old economy one, that the new economy debates about output measurement and pricing have exposed.

8. Similar but more complex statistical needs exist in significant areas of ICT-related capital formation, such as accounting for software, and the wider category of intangible assets, which clearly fall within any definition of the knowledge-based economy. Solutions to those needs raise additional measurement problems. For example, in intangibles there is major uncertainty and subjectivity concerning valuation methods. The question to be resolved is how far and how fast we can move, given the resource limits to implementation of any changes.

9. The need for a new paradigm for national accounts statistics is not yet proven, partly because there is no coherent new theory of how ICT has altered fundamental economic relationships within the economy. However, it has changed the behaviour of and interactions between economic agents.

10. ICT has also changed the economic characteristics of assets as inputs to productive processes. For example, the behaviour of knowledge as an asset that can gain value in use is very different from that of physical assets. The assessment of knowledge, learning and skills as assets is in most countries handicapped by the lack of data on skills and lifelong learning within firms. That statistical gap is now being filled by some national statistical offices.

11. Another area where new dimensions of measurement may be needed is in assessing the effects of the order of magnitude expansion in communication, since the "networked society" allows many more interactions — both social and economic — between individuals. There are areas in which work required to adapt existing economic measurement frameworks will be very substantial, but the required changes are updates and extensions rather than a completely new framework.

12. To achieve those changes and to understand business behaviour for policy purposes, there will be increasing demand for economic micro-data. The ability to relate business data sets to other sources and to link performance data to information on inputs will be important in meeting those challenges.

13. It has been argued that the scale of change needed in some areas does represent a new paradigm for measurement. In particular, for such services as health and education there is a need for radically new approaches since existing input-based measures fail to deliver policy-relevant information. National accounts statistics based on inputs are of limited value, and moves towards output — or even better outcome — measures are needed. Here, ICT should be part of the solution.

14. There are two areas in which new approaches are required in the assembly of data for official economic statistics. First, data collection must develop to reflect changes in business organization, new sources of data and best technology. Too few national statistical offices have yet made significant moves to help enterprises providing their raw material — data — in new ways that capitalize on firms' electronic data systems. Second, the global dimension of business operations is relatively new for national statisticians and demands a new paradigm for data collection. Current problems with measuring enterprises as national entities should be resolved through the active involvement of international organizations.

15. Outputs of the statistical process are affected too. ICT has brought a revolution in the customers of national statistical offices. They are now a more broadly based cross-section of society, e-enabled through the web. To that increasingly diffuse audience, national statistical offices deliver information depicting more complex economic and social structures. It is no longer enough to present raw unexplained data. Demands for explanation and meta-data that add context and value to data will grow, and strategies for dissemination will need to change as a result.

V. Leading issues in social statistics

16. In an economy driven by information and knowledge, ICT has social dimensions which must be recognized — in education, health, labour markets and elsewhere. It is the combination of access to information and knowledge that determines the ability of individuals to derive benefits from public services and to operate effectively in society, and those benefits need to be understood in terms of outcomes. Statisticians will need to be able to identify disadvantaged groups in both areas — the knowledge divide and the digital/access divide — to aid policy makers in tackling exclusion.

17. This will require initiatives by statisticians to:

- Take into account the cross-cutting nature of ICT, linking economic and social outcomes and recognizing its pervasive effects;
- Ensure coherence in data definitions and structures so as to enable links to be drawn between micro-data from different sources and provide understanding of the social effects of public policy and economic developments;
- Respond to demand for public sector service measures in terms of outcomes so as to provide relevant public sector delivery and productivity data.

18. The role of education and skills development in the labour force is a central element of measurement for the information society. Defining and measuring the growth of human capital is critical to understanding productivity and interpreting behaviour in the labour market. Frameworks for educational monitoring against the background of increasing ICT intensity have been presented at the conference, and could form a basis for further international development.

19. There is increasing recognition that ICT changes social behaviour, and affects not only the composition of demand but also patterns of interaction between citizens, government and enterprise. Time-use measurement of individuals is an increasingly important tool to understand those changes. As the digital economy blurs boundaries between home and work, leisure and employment, understanding how time is used by citizens as consumers and as members of the labour force can be a vital input to policy analysis. If there is a "new paradigm" for individual economic behaviour, that is the way we are most likely to find and track it.

VI. The international statistical community and the new economy measurement agenda

20. There is recognition that both international and national organizations find it increasingly difficult to keep pace with the changes in statistical needs, at a time when international comparability is more important than ever, given the rate of change, the increasing internationalization of firms and the need to understand global effects of ICT across different countries. Additional work is essential to underpin convergence, and existing international frameworks may not be able to deliver it.

21. However, the reality is that for most official statistics organizations national priorities come first, and it is necessary to build international agreement for required changes on that understanding. The relevance of new statistical approaches must therefore be demonstrated, and it is not currently clear that changes considered useful by the most developed economies are beneficial to all.

22. With limited resources for statistics development, two ways to make the most of those available must be pursued:

- A more coherent programme of research into ICT and information society issues, including priorities and shared workload between organizations to avoid duplication of effort;
- International bodies must, as a result of research, identify clear recommendations to member countries, not only on what they should do but also how they can achieve recommended outputs; that would go a long way to improve implementation of agreed changes to international frameworks.

23. Long-term commitment to supporting change is required, in which national statistical offices agree to pool resources and focus on areas of expertise in a shared research agenda. That is the only way to make progress affordable. There must also be more effective use of academic input within such a framework, which may require more and perhaps different, resources and skills in national statistical offices and international organizations to implement the changes needed.

24. Price measurement, software accounting and service sector output all require more research, with exchange of current best practices, and new concepts, which would permit the international statistical community to develop well understood comparisons of methodology, procedures and practices. International organizations must facilitate the sharing and exchange process.

25. There is general support for the need to update the System of National Accounts, 1993 (1993 SNA), since today's framework is inadequate for such intangibles as research and development, a major weakness. Processes to revise the 1993 SNA in response to market and technology changes have been simultaneously too slow to keep pace and too complex for all to follow, and should be amended:

- To enable all countries to meet basic standards in national accounts;
- To adapt the existing framework to fill gaps identified.

26. The changes in decision processes rest with the national statistical offices, who must ensure:

- Commitment to implementation in good time;
- More focus on exchanging good practice in order to speed up implementation.

27. Convergence of classifications for 2007 so as to improve comparability is also a high priority in order to provide a secure understanding of differences between countries and international effects of change. International organizations have a central role in that area, but can only build on the ability of national statistical offices to exchange and adopt good practices.

VII. Priorities for official statisticians to tackle now

28. Conference participants were asked their priorities for international action within the statistical system to resolve issues outlined in discussion; the summary of responses set out below also seeks to identify the organizations through which such action is best directed.

Processes for change

29. The mechanisms currently in use to develop systems of national accounts and classifications and to implement new international agreements have not kept pace with economic change. The following developments, requiring action at all levels in the international statistical system, would assist.

Development	*Initiators*
Commitment to more flexible, possibly incremental approach to SNA development, with more frequent updates aiming for convergence and comparability; agree on process, research agenda and timetable to progressive update.	Intersecretariat Working Group on National Accounts (ISWGNA), Statistical Commission

Development	*Initiators*
Focus on SNA change to specify how required changes can be implemented to speed adoption and aid comparability.	ISWGNA, assisted by national statistical offices
Greater investment in identification and exchange of "good practice" statistical approaches, to spread common methodology and practice.	National statistical offices (NSOs), drawing on academic input; Statistical Office of the European Communities (Eurostat)

Measurement methodology

30. Agreed solutions are required to a wide range of technical questions, of which the following are the most pressing:

Development	*Initiators*
Marketed services: agreed approach to output measurement and price deflator methodology.	Voorburg city group, Organisation for Economic Cooperation and Development (OECD)/Eurostat Task Force
Quality and pricing measurement for ICT goods, including common standard for hedonic pricing approaches.	OECD, Eurostat Hedonics Centre
ICT and software capital measurement methodology.	Canberra city group, European Union (EU)
Treatment of knowledge and other related intangibles as capital assets, building on work by firms and academics.	Canberra group, NSOs, academics
More investment in information society measures to build evidence on access, adoption and impact of ICT, and electronic networks for business and households.	OECD, Eurostat, leading NSOs
Classifications 2007, where convergence is vital to improve comparability, and to recognize the increased role of digital/ information products.	Convergence Working Group, United Nations, Eurostat, United States, Mexico, Australia, New Zealand
Measurement of human capital, and quality of labour inputs to economic activity, and better understanding of links between skills, knowledge, access to ICT networks and productivity.	OECD/Swiss Federal Statistical Office, United Nations Educational, Scientific and Cultural Organization

Development	*Initiators*
Measurement of health and education services, moving the focus from input to output, or outcome, frameworks to provide information that policy makers need, via satellite accounts.	World Health Organization (WHO), Statistics Canada, Paris21 consortium
Develop business micro-data, for analysis of productivity behaviour and performance, with protocols and frameworks to allow international comparison.	Statistical Working Party of the OECD Committee of Industry and Business, NSOs
Develop time-use data, as part of household micro-data approach, to show effects of networks on individual behaviour — social and economic — and on changing demand and skills.	United Nations Development Programme (UNDP), OECD, NSOs
Measures to identify the digital divide, within and between regions, to identify disadvantaged groups to aid policy makers.	UNDP, OECD, NSOs

Measurement in practice

31. Measuring the new economy offers both challenges and opportunities for statisticians. Economic entities, and social networks, are more complex as a result of ICT use, but the technology itself offers many of the solutions.

Development	*Initiators*
Integrated measurement approaches to multinational firms, accounting for an increasing part of economic activity, where national measurement fails to capture behaviour or performance.	NSOs, Eurostat, World Trade Organization
Develop methodology to improve data capture on output, prices etc. from large databases developed by firms as part of operations; so far, few NSOs have made significant progress.	Ottawa group, NSOs and leading firms

Dissemination

32. As national statistical office roles adapt to demands from "evidence-based" policy, the importance of clear communication and objectivity increases. Statisticians have a clear responsibility to improve accessibility and interpretability, especially since the Internet delivers their output directly to business and citizens.

Development	*Initiators*
Closer integration of concepts and metadata so as to ensure best practices, in the areas of definitions, quality statistics and comparability, on which users can depend.	NSOs, through international leadership
Improved presentation and interpretation to support evidence-based policy monitoring, via new dissemination standards and through effective dialogue with users of statistics.	NSOs, OECD, Paris21 consortium

VIII. Monitoring progress

33. The above-mentioned steps will help statisticians to present citizens, policy makers and business with a more convincing picture — still incomplete — of changes going on around them. Without change, there is an increasing risk that official statistics may "miss" the information economy. The IAOS conference has brought together a wide cross-section of users and providers of statistics, with shared interest in ensuring that the international statistical system meets its users' changing requirements. Many of the areas identified above are already being tackled.

34. For many developments, strong leadership from national statistical offices is required to move the agenda forward. Sharing good practice was a recurring theme of our discussions, and effective sharing must be driven "from the ground up". An important test of progress will be the extent to which national statistical offices achieve such sharing.